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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/721,356	11/22/2000	Martin C. Flautt	24854A	9978

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OWENS CORNING
2790 COLUMBUS ROAD
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EXAMINER

THOMPSON, CAMIE S

ART UNIT PAPER NUMBER

1774

DATE MAILED: 05/18/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/721,356	Applicant(s) FLAUTT ET AL.	
	Examiner Camie S Thompson	Art Unit 1774	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on Amendment filed March 17, 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2,4-6,9,10 and 12-15 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-2,4-6, 9-10 and 12-15 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

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DETAILED ACTION

1. Applicant's amendment and accompanying remarks filed March 17, 2004 have been acknowledged.
2. Examiner acknowledges amended claim 1.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-2, 6, 9-10 and 12-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dana et al., U.S. Patent Number 5,908,689 in view of Das et al., U.S. Patent Number 4,637,956.

Dana discloses reinforcing fibers such as glass fiber strands wherein an aqueous chemical treatment, which is dried, is applied to the fibers as per instant claims 1, 2 and 13 (see column 4, lines 1-17). Dana also discloses that the aqueous chemical treatment comprises an emulsified polyester resin, a curing agent, a film former, a thickener and water as per instant claim 1 (see column 4, lines 23-28; column 5, lines 31-37; column 6, lines 67-68; column 7, line 24; column 15, lines 39-40 and Table 3). Additionally, the Dana reference discloses in column 4, lines 24-28 and Table 2 that the film former is a vinyl polymer as per instant claim 6. Deionized water is

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disclosed in the reference in column 7, line 24 as per instant claim 12. A reinforcing mat comprising reinforcing fibers that form a strand having an applied chemical treatment is disclosed as per instant claim 14 (see Dana reference claims 1-12). A reinforced polymeric composite is disclosed as comprising a thermosetting matrix material and a reinforcing mat that is claimed in instant claim 15 as shown by the Dana reference in column 14, lines 54-62. Table 3 of the Dana reference discloses the use of Aropol 59036 as a thickener as per instant claims 9 and 10. Although Dana does not specifically disclose that the thickener is an acrylic polymer. It is well known in the art that Aropol 59036 is an acrylic polymer manufactured by Ashland Chemical.

Dana does not disclose the use of an epoxidized polyvinyl acetate film former as per instant claim 1. Das teaches strands of chemical treated glass fibers wherein the residue is dried. The Das reference also teaches that the chemical treatment comprises a curing agent, a film former, an emulsified resin, a thickener and water. In addition, Das teaches that the film former is an epoxidized polyvinyl acetate as per instant claim 1 (see abstract and column 1, line 65- column 2, line 20). The epoxidized polyvinyl acetate film formers are aqueous soluble (see Das: column 6, lines 48-63). Therefore, it would have been obvious to one of ordinary skill in the art to use an epoxidized polyvinyl acetate film former in order to have chemically treated glass fibers and strands having good wettability of the fibers in the polymeric matrix while having improved strength properties of tensile strength, flexural strength and impact strength (see Das: column 1, lines 57-63). The Dana reference does not disclose the amount of chemical treatment applied to the reinforcing fibers as per instant claim 1. The applied chemical treatment affects the bonding relationship between the fibers and the resin. However, this feature is optimizable. Discovery of

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optimum values of a result effective variable involves only routine skill in the art in re Boesch, 617 F. 2d 272, 205 USPQ (CCPA 1980). Therefore, it would have been obvious to one of ordinary skill in the art to have a 5 % to 30% by weight of chemical treatment applied to the reinforcing fibers in order to have improved tensile strength for the fibers due to a greater bonding relationship between the fibers and the resin.

6. Claims 1 and 4-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dana et al., U.S. Patent Number 5,908,689 in view of Das et al., U.S. Patent Number 4,637,956 and in further view of Eichorn et al., U.S. Patent Number 4,596,736.

Dana discloses reinforcing fibers such as glass fiber strands wherein an aqueous chemical treatment, which is dried, is applied to the fibers as per instant claim 1 (see column 4, lines 1-17). Dana also discloses that the aqueous chemical treatment comprises an emulsified polyester resin, a curing agent, a film former, a thickener and water as per instant claim 1 (see column 4, lines 23-28; column 5, lines 31-37; column 6, lines 67-68; column 7, line 24; column 15, lines 39-40 and Table 3). Dana does not disclose the use of an epoxidized polyvinyl acetate film former as per instant claim 1. Das teaches strands of chemical treated glass fibers wherein the residue is dried. The Das reference also teaches that the chemical treatment comprises a curing agent, a film former, an emulsified resin, a thickener and water. In addition, Das teaches that the film former is an epoxidized polyvinyl acetate as per instant claim 1 (see abstract and column 1, line 65- column 2, line 20). The epoxidized polyvinyl acetate film formers are aqueous soluble (see Das: column 6, lines 48-63). Therefore, it would have been obvious to one of ordinary skill in the art to use an epoxidized polyvinyl acetate film former in order to have chemically treated glass fibers and strands having good wettability of the fibers in the polymeric matrix while

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having improved strength properties of tensile strength, flexural strength and impact strength (see Das: column 1, lines 57-63).

Neither Dana nor Das disclose the use of a peroxide as a curing agent. Eichhorn teaches chemically treated fibers wherein the treatment comprises an organic emulsified resin film former. Eichhorn also teaches that thickeners and crosslinking agents such as dieumyl peroxide may be used (see Eichhorn column 5, lines 25-29). Peroxides are known to cure resins. Therefore, it would have been obvious to one of ordinary skill in the art to use dieumyl peroxide as a curing agent in order to cure the emulsified resin to form a reinforced composite (see Dana claim 31).

Response to Arguments

7. Applicant's arguments filed March 17, 2004 have been fully considered but they are not persuasive. Applicant argues that the combination of Dana and Das is not proper because of the weight of the sizing composition. Both Dana and Das teach reinforcing fibers that have an applied aqueous chemical treatment wherein the treatment composition includes an emulsified polyester resin, a curing agent, a film former, a thickener and water. Thus, Dana and Das are analogous are. It is true that neither Dana nor Das discloses the weight of the sizing composition, however, the weight of the sizing composition can be optimized in order to improve the bonding strength between the fibers and the resin. And, thus the optimization of the sizing composition is not without motivation. The rejections are maintained.

8. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

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A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communication from the examiner should be directed to Camie S. Thompson whose telephone number is (703) 305-4488. The examiner can normally be reached on Monday through Friday from 7:30 am to 4:00 pm. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cynthia H. Kelly, can be reached at (703) 308-0449. The fax phone number for the Group is (703) 872-9306. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0661.

CYNTHIA H. KELLY
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1700

Cynthia H. Kelly